



**THE NATIONAL MINING ASSOCIATION (NMA)
NUCLEAR REGULATORY COMMISSION (NRC)
URANIUM RECOVERY WORKSHOP**

**May 18-19, 2004
Executive Tower Hotel, Denver, Colorado**

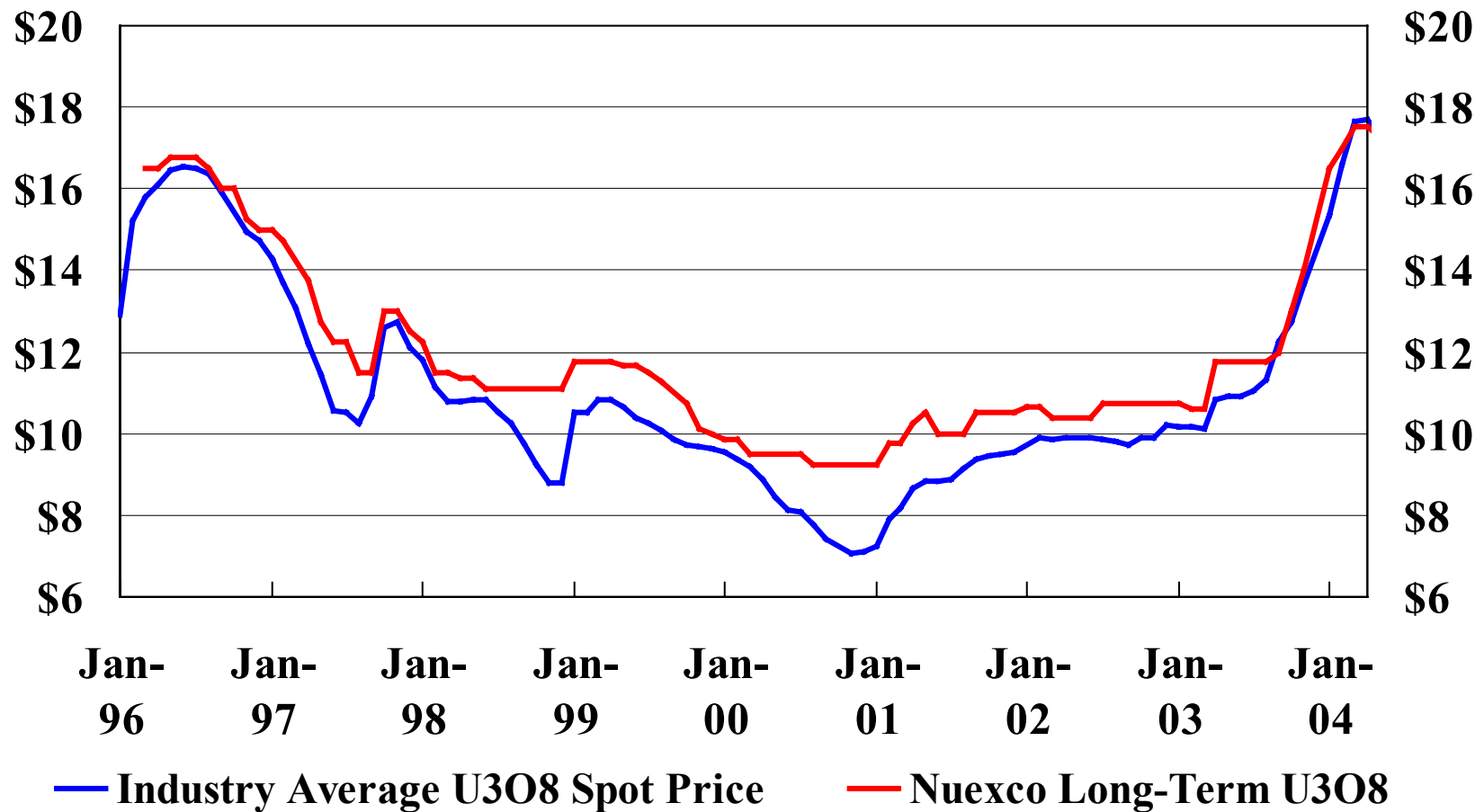


**URANIUM
CONSUMPTION, SUPPLY
AND
PRODUCTION UPDATE**

**Fletcher T. Newton
President & CEO
Power Resources, Inc.**

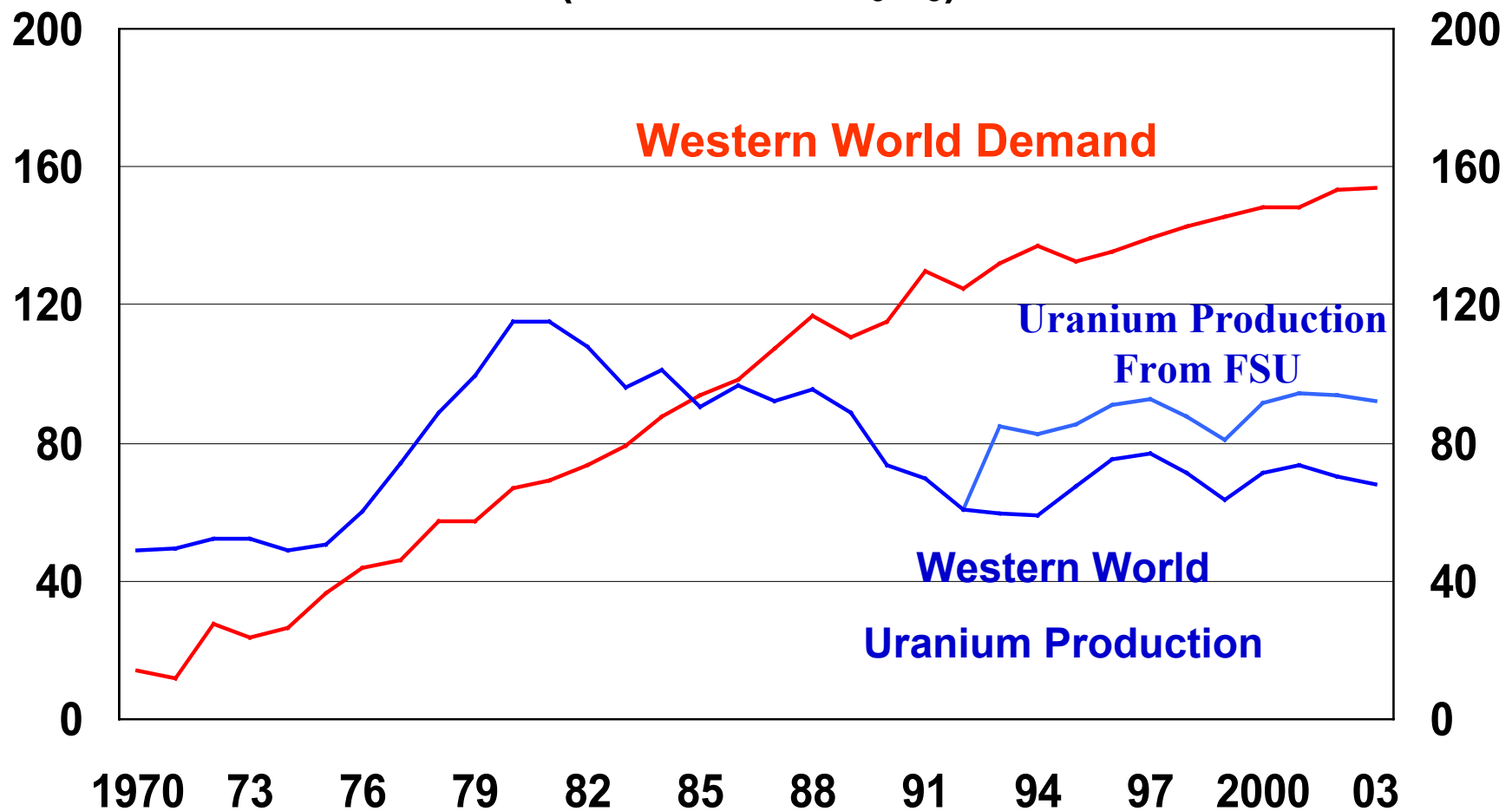
U_3O_8 Price

US \$/lb U_3O_8



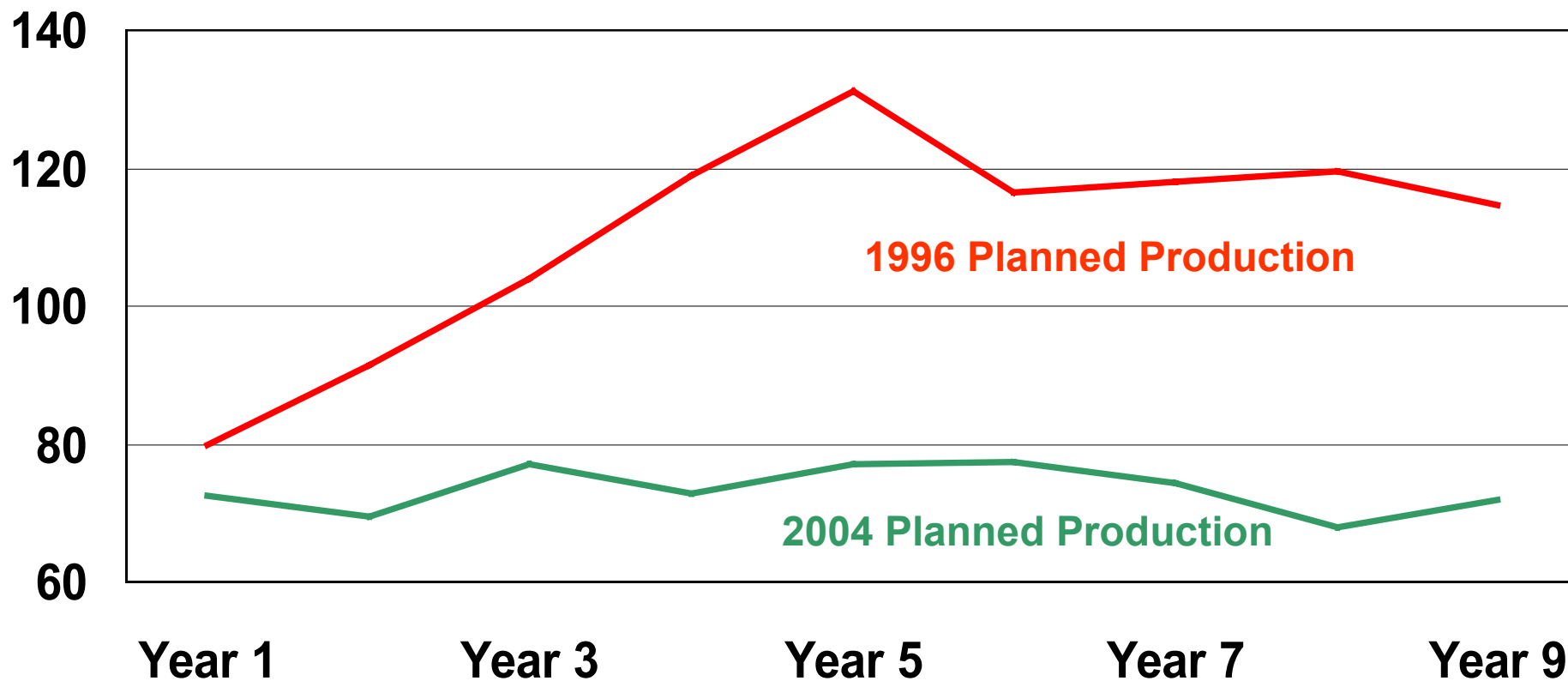
Uranium Market

U_3O_8 Production vs Demand (Million lbs U_3O_8)



Uranium Market

Forward Production Plans (Million lbs U₃O₈)

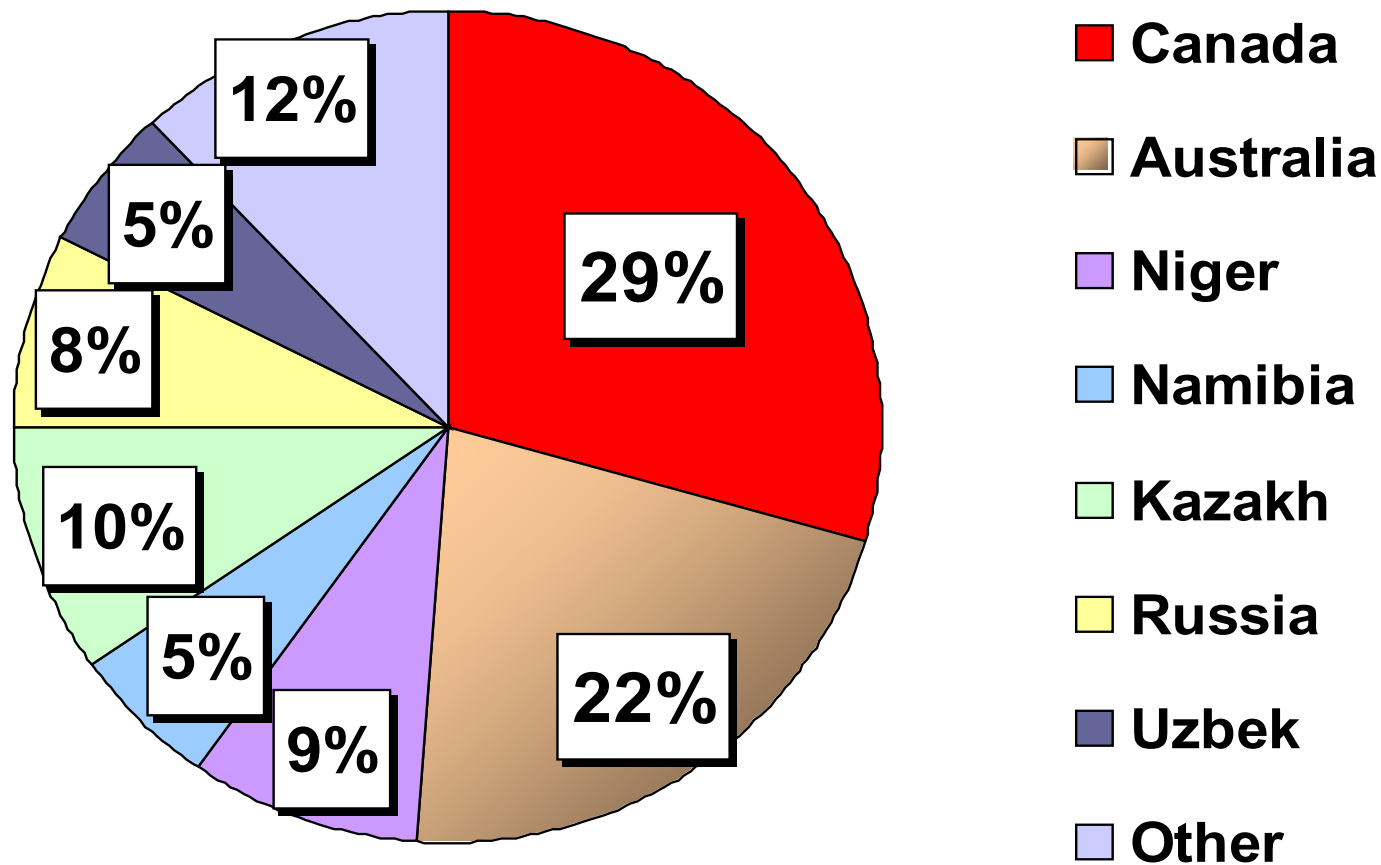


Source: UxC

Uranium Market

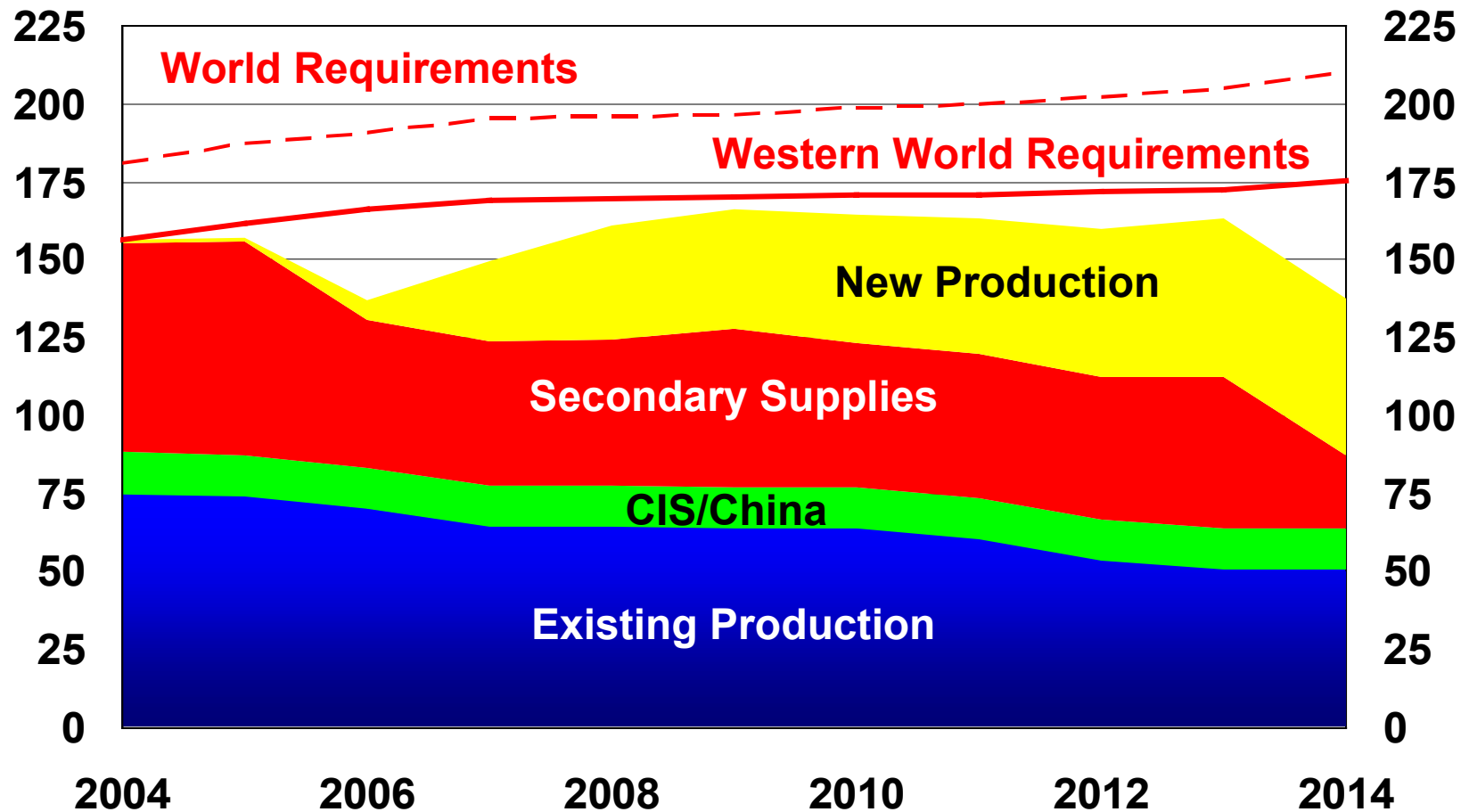
92 million lbs U_3O_8

2003 Estimated World Uranium Production



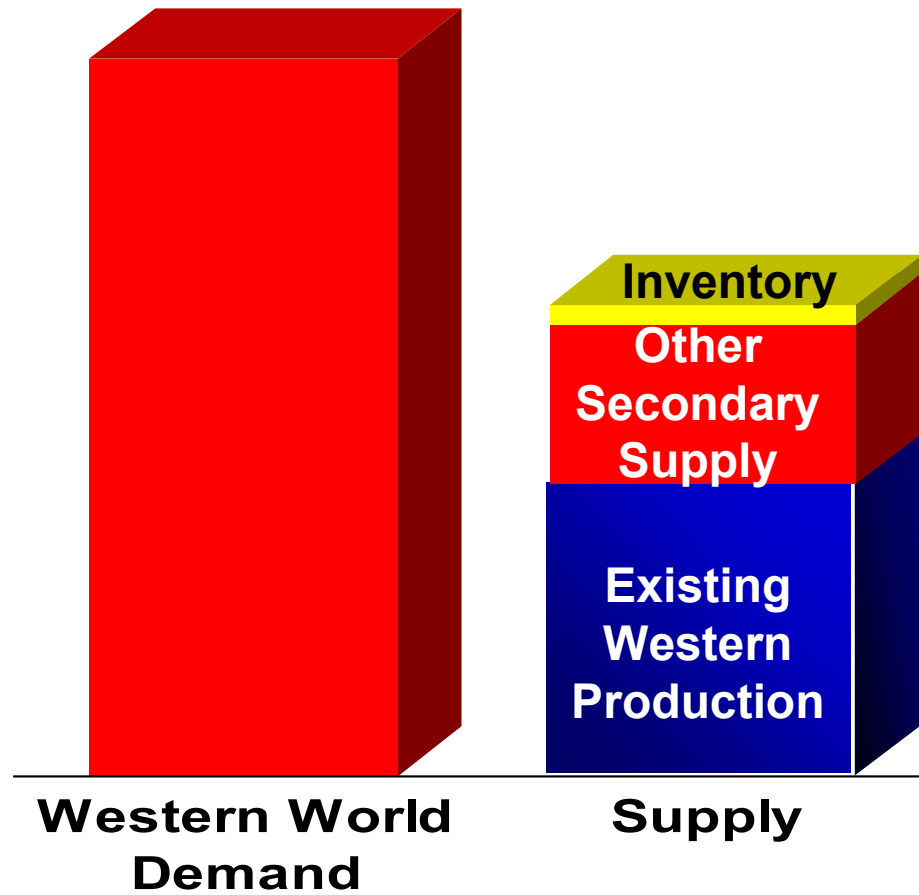
U_3O_8 Supply/Demand

Million lbs U_3O_8

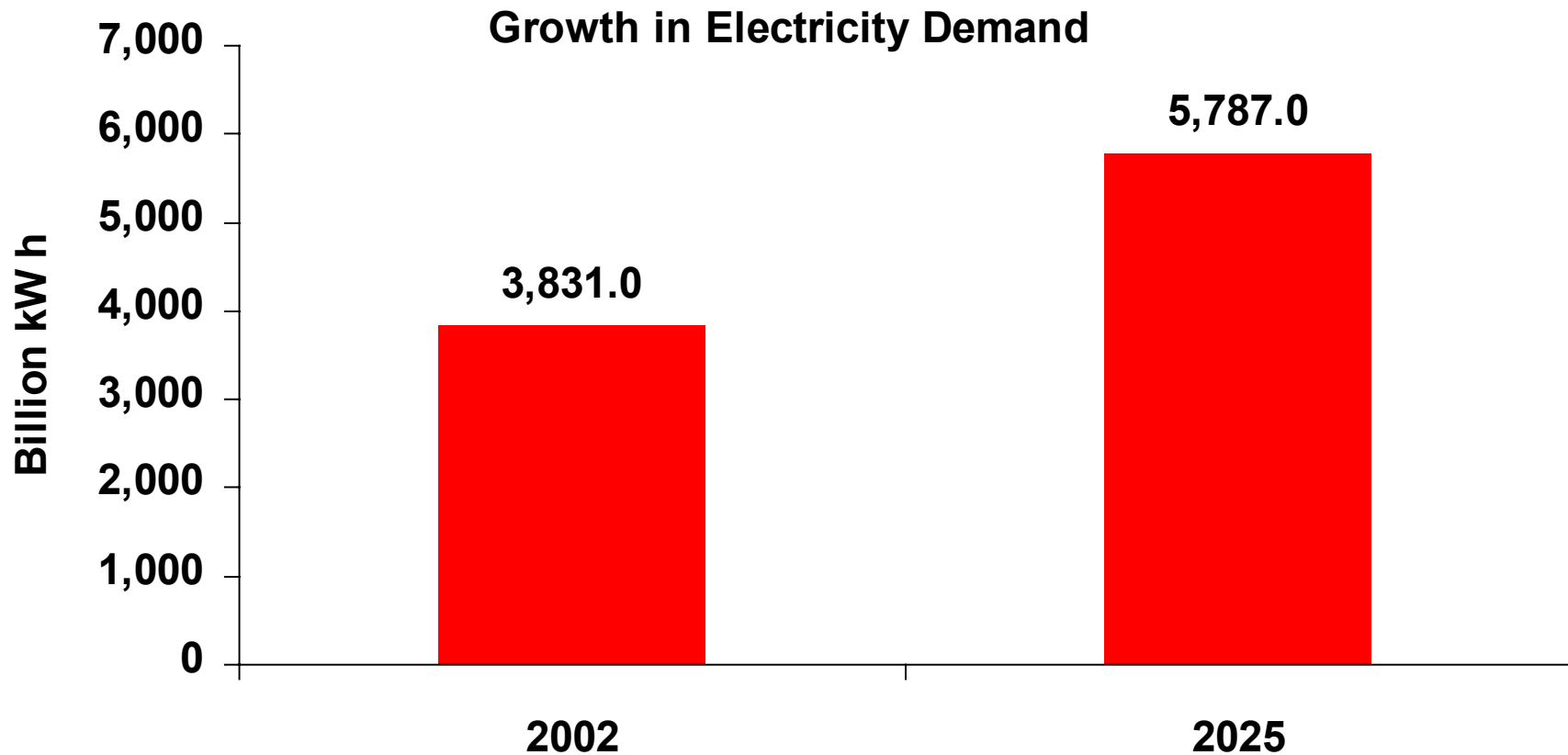


U_3O_8 Supply/Demand

2004-2020

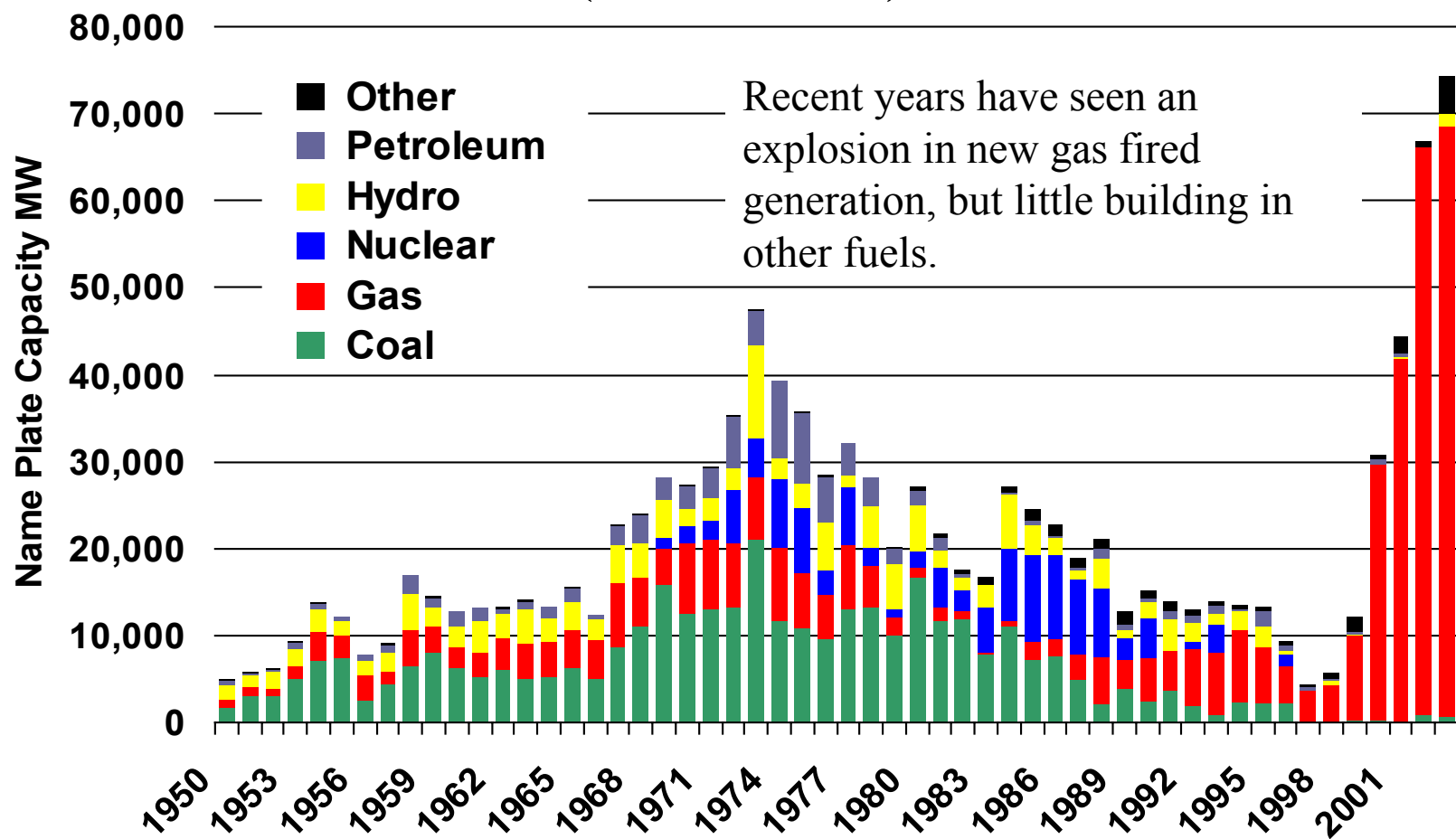


U.S. Needs 50 Percent More Electricity By 2025



Source: EIA Annual Energy Outlook – Updated 05/04

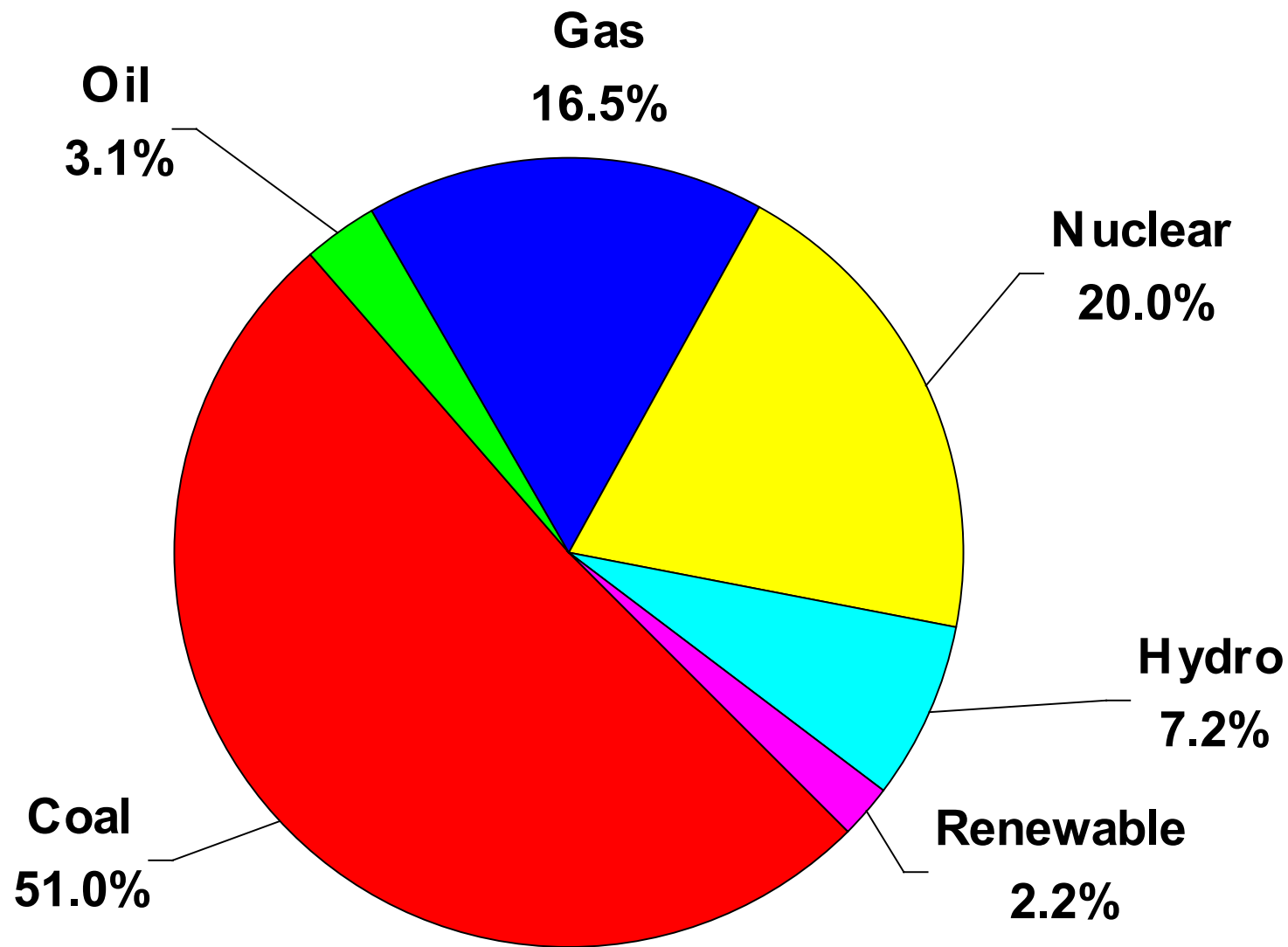
Capacity Brought on Line by Fuel Type (1950-2002)



Source: RDI PowerDat database. Last updated 9/15/03.



Share of Total US Electricity Generation by Fuel (2003)



Source: EIA Updated 04//04



US Electricity Generation Fuel Shares (1973 vs 2003¹)

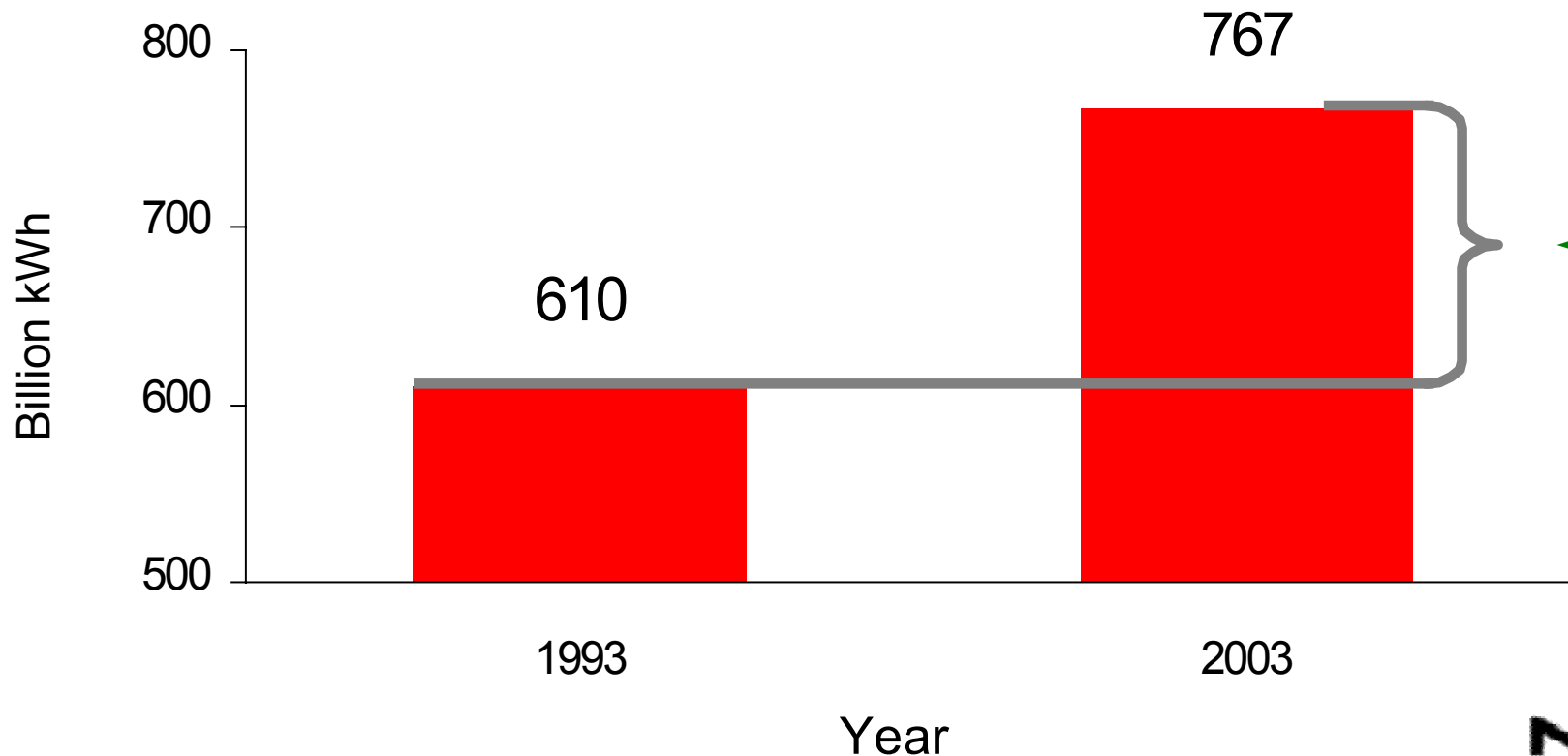
Fuel Type	1973	2003
Nuclear	4.5%	20.0%
Coal	45.6%	51.0%
Oil	16.9%	3.1%
Gas	18.3%	16.5%
Hydro	14.6%	7.2%
Other	0.1%	2.2%

¹Includes utility and non-utility generation
Source: EIA - Updated 04/04



Nuclear Plant Output: Growth During the Last 10 Years

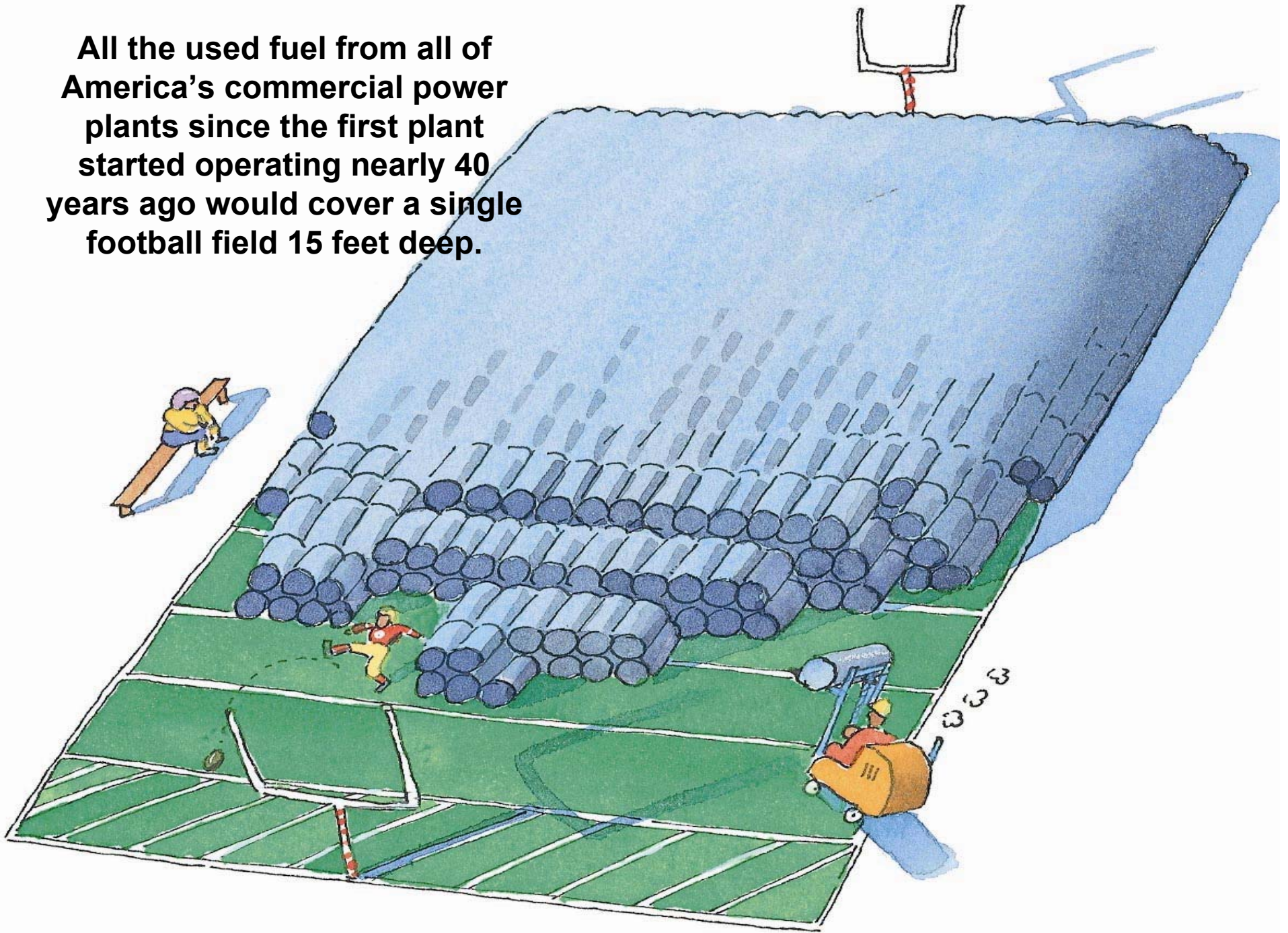
Equivalent to 19 new 1,000-megawatt power plants



Source: NRC – Updated 04/04



All the used fuel from all of America's commercial power plants since the first plant started operating nearly 40 years ago would cover a single football field 15 feet deep.



MECHANICS of High Enriched Uranium (“HEU”) AGREEMENT

- **Russia takes weapons grade metallic HEU ($> 90\%$ U^{235}) and converts the material to low-enriched UF_6 (“LEU”) that contains 4.5% U^{235} .**
- **Techsnabexport (the commercial arm of Russia’s Ministry of Atomic Energy) sometimes called Tenex, ships the LEU to the United States Enrichment Corporation (“USEC”) at Paducah, Kentucky.**
- **USEC gives back to Tenex at Paducah natural (i.e., un-enriched UF_6) thereby only purchasing the enrichment services (SWU’s) contained in the LEU received from Tenex.**
- **Tenex sells a portion of the natural UF_6 (known as the “HEU feed”) to the “consortium,” consisting of Cameco, Cogema (Areva), and Nukem. The remaining HEU feed is shipped back to Russia for use in further downblending or delivery into existing contracts in Russia and the former Soviet-bloc states.**
- **In November 2003, Tenex terminated its agency agreement with Global Nuclear Services and Supply (“GNSS”), effective December 31, 2003. GNSS has sold its allotment of HEU feed only through 2007. Therefore, GNSS’ share of HEU feed for the period 2008-2013 (a quantity ranging between approximately 12,000 to 16,000 MTU as UF_6 , containing approximately 30 to 40 million pounds U_3O_8 equivalent has been removed from the market).**

2003 Update - HEU Feed

Overview of the HEU Feed Deal



The Megatons to Megawatts program is a unique, commercially financed government-industry partnership in which bomb-grade uranium from dismantled Russian nuclear warheads is being recycled into fuel used by American power plants to produce electricity.

By 2013, when the program is completed, 500 metric tons of Russian nuclear warhead material (the equivalent of 20,000 warheads) will have been recycled into enough fuel to power the entire United States for about two years.

The program celebrated the 10th anniversary in February 2004 with the elimination of an estimated 200 tons of Russian weapons-grade uranium -- equivalent to 8,000 nuclear weapons. Better still, this material is being recycled into fuel for U.S. nuclear power plants, enough to power a large U.S. city for nearly 300 years.

Megatons to Megawatts

Turning Russian Nuclear Warheads into Fuel: Step-by-Step

Dismantlement:

The conversion of Russian nuclear weapons into power plant fuel takes place at several nuclear installations in Russia and begins with the removal of the warheads and their highly enriched uranium (HEU) metal components from strategic and tactical nuclear missiles.

Nuclear warheads are removed from Russian missiles and HEU components are processed into uranium fuel.

Transfer to Cylinders:

At the three dilution facilities, the now low-enriched UF₆ fuel is checked to ensure the product meets commercial specifications and then transferred to 2.5-ton steel cylinders.

Shipment to St. Petersburg:

The uranium fuel is enclosed in shipping containers and sent to a collection point in St. Petersburg. USEC takes possession of the fuel containers in St. Petersburg and they are shipped to USEC's facilities in the United States.

Arrival at USEC:

At USEC's facilities (originally the Portsmouth plant but now the Paducah plant), the LEU is tested again to ensure that it meets appropriate commercial and customer specifications. If necessary, the enrichment level of the uranium fuel can be further adjusted to meet utility customers' needs.



Converting HEU metal shavings to HEU oxide, Mayak Production Association.



Conversion Building, Siberian Chemical Enterprise.



Administration Building, Electrochemical Plant.



Administration Building, Urals Electrochemical Integrated Plant.



At St. Petersburg, the first shipment of HEU to LEU fuel is loaded for shipment to USEC facilities (1995).



Cylinders of the first shipment of warhead-derived LEU fuel arrive at USEC's Portsmouth, Ohio plant (1995).

Oxidation:

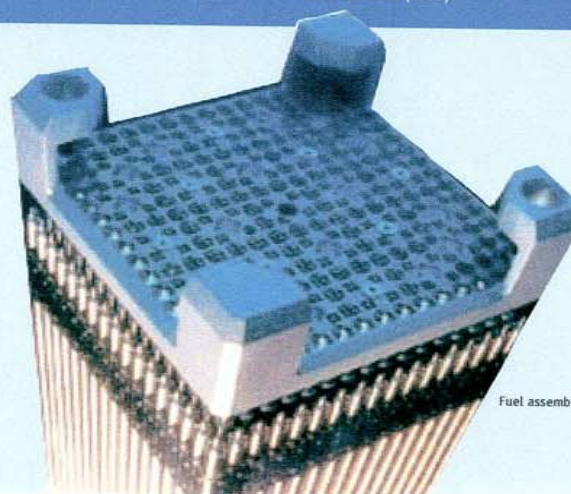
At the Siberian Chemical Enterprise (SChE) (formerly Tomsk-7) in Seversk and the Mayak Production Association (MPA) near Ozersk, the HEU warhead components are machined into metal shavings. The shavings are then heated and converted to an HEU oxide and any contaminants are chemically removed.

Fluorination:

At SChE and the Electrochemical Plant (ECP) near Krasnoyarsk, the HEU oxide is converted to highly enriched uranium hexafluoride (UF₆), a compound that becomes a gas when heated.

Dilution:

At SChE, ECP and the Urals Electrochemical Integrated Plant (UEIP) near Ekaterinburg, the highly enriched UF₆ is introduced into a gaseous process stream. There, it mixes with other material and is diluted to less than 5 percent concentration of the fissionable uranium-235 isotope, a level too low to be of any military value but ideal for producing electric power.



Fuel assembly ready for insertion into a nuclear reactor.

Shipment to Fabricators:

Based on customer instructions, USEC ships the LEU fuel to fabricators (Global Nuclear Fuel, Framatome or Westinghouse), who convert the LEU into uranium oxide pellets and fabricate them into fuel assemblies. The assemblies are then shipped to USEC's utility customers as a source of fuel for their nuclear reactors.

To provide confidence that the LEU fuel from Russia is actually derived from warhead material, the U.S. Department of Energy and the National Nuclear Security Administration administer the HEU Transparency Program. Through this program, all aspects of the HEU to LEU process at the plants listed above are monitored.